



QA Review Batch K9805398 (PCB Congeners)  
Site: Duwamish River  
Page 2

1. Timeliness

All samples met holding time criteria of 14 days for sample extraction and 40 additional days for extract analysis

2 Initial Calibration

A six point initial calibration was performed using tetrachloro-meta-xylene (TCMX) as an internal standard. Relative response factors (RRF) were calculated for each target congener. The RRF percent relative standard deviation (%RSD) was less than 20 percent for all analytes.

3 Calibration Verification

Calibration verification standards were analyzed every 12 hours using a midrange standard. The RRF percent difference was less than 15 percent of the initial calibration value.

4. Retention Time Windows

Relative Retention Time Windows were calculated from initial calibration. Retention times for calibration verification standards were within established windows of  $\pm 0.06$  RRT.

5 Detection Limits

Instrument detection limits met project required quantitation limits with the following exceptions:

Sample	Compound	QL Goal (ppb)	Reported QL (ppb)
98334000	PCB 52	1	3
98334000	PCB 66	1	7
98334000	PCB 118	1	5
98334000	PCB 153	1	8
98334000	PCB 187	1	6



QA Review Batch K9805398 (PCB Congeners)

Site: Duwamish River

Page 3

Sample	Compound	QL Goal (ppb)	Reported QL (ppb)
98334000	PCB 128	1	2
98334000	PCB 156	1	2
98334000	PCB 180	1	8
98334000	PCB 170	1	4
98334001	PCB 123	1	2
98334001	PCB 153	1	11
98334001	PCB 187	1	5
98334001	PCB 167	1	2
98334001	PCB 180	1	8
98334001	PCB 170	1	5
98334002	PCB 153	1	10
98334002	PCB 167	1	2
98334004	PCB 66	1	15
98334004	PCB 123	1	3
98334004	PCB 114	1	2
98334005	PCB 66	1	11
98334005	PCB 123	1	2
98334006	PCB 66	1	22
98334006	PCB 77	1	2
98334006	PCB 123	1	3
98334007	PCB 123	1	2

Where quantitation limit goals were exceeded, undetected analytes were qualified (UI) to indicate matrix interference

6 Blanks

a) Laboratory Method Blanks

Laboratory method blank frequency criteria were met



QA Review Batch K9805398 (PCB Congeners)

Site: Duwamish River

Page 4

No target analytes were reported in laboratory method blanks.

b) Field Blanks

No field blanks were associated with this laboratory batch.

7. System Monitoring Compounds (Surrogates)

Hexabromobiphenyl (HBB) was used as a surrogate. Surrogate compound percent recovery met quality control criteria for all samples

8. Matrix Spike and Matrix Spike Duplicate

Matrix spike (MS) or matrix spike duplicate (MSD) percent recovery for the following compounds were outside QC guidelines.

Sample	Compound	Percent Recovery	QC Limits
98334002MS	PCB 153	230	60-140
98334002MSD	PCB 153	236	60-140

LCS recoveries for PCB 153 were acceptable. No action was taken based solely on MS/MSD data

Relative percent differences (RPD) between MS and MSD percent recoveries were within QC guidelines.

9 Laboratory Control Sample (LCS) Analysis

All LCS percent recoveries met QC guidelines except for the following compounds:

Sample	Compound	Percent Recovery	QC Limits
K980814-LCS	PCB 18	64	70-130



QA Review Batch K9805398 (PCB Congeners)  
 Site: Duwamish River  
 Page 5

Results for compounds listed above were qualified as estimated (J). Undetected analytes were also qualified as estimated (UJ)

10. Field Duplicate Analysis

No field duplicate samples were associated with this SDG.

11. Second Column Confirmation

The percent difference in reported analyte concentration was greater than 35 percent for the primary and confirmation column for the following samples:

Sample Number	Compound	DB-5 Conc	DB-608 Conc	% Diff
98334000	PCB 28	2	3	50
98334000	PCB 52	2	6	200
98334000	PCB 101	3	5	67
98334000	PCB 138	10	6	67
98334000	PCB 128	1	2	100
98334001	PCB 18	2	3	50
98334001	PCB 28	4	7	75
98334001	PCB 52	5	7	40
98334001	PCB 101	4	9	125
98334001	PCB 123	11	1	1000
98334001	PCB 138	14	8	75
98334002	PCB 18	1	2	100
98334002	PCB 28	2	4	100
98334002	PCB 52	3	10	233
98334002	PCB 101	3	6	100
98334002	PCB 138	12	7	71
98334002	PCB 206	1	2	100
98334003	PCB 28	1	2	100



QA Review Batch K9805398 (PCB Congeners)  
 Site: Duwamish River  
 Page 6

Sample Number	Compound	DB-5 Conc	DB-608 Conc	% Diff
98334003	PCB 52	2	3	50
98334003	PCB 66	7	5	40
98334003	PCB 101	2	3	50
98334003	PCB 105	1	2	100
98334003	PCB 138	7	4	75
98334003	PCB 170	2	3	50
98334004	PCB 28	1	3	200
98334004	PCB 101	7	11	57
98334004	PCB 123	14	2	600
98334004	PCB 114	1	3	200
98334004	PCB 138	21	11	91
98334005	PCB 18	1	2	100
98334005	PCB 28	2	4	100
98334005	PCB 52	4	8	100
98334005	PCB 44	2	3	50
98334005	PCB 101	4	7	75
98334005	PCB 123	11	1	1000
98334005	PCB 138	14	7	100
98334005	PCB 156	1	2	100
98334005	PCB 206	1	2	100
98334006	PCB 18	3	5	67
98334006	PCB 28	6	9	50
98334006	PCB 101	8	15	88
98334006	PCB 77	54	1	5300
98334006	PCB 123	21	2	950
98334006	PCB 138	27	15	80
98334006	PCB 195	2	3	50
98334007	PCB 18	2	3	50



QA Review Batch K9805398 (PCB Congeners)

Site: Duwamish River

Page 7

Sample Number	Compound	DB-5 Conc	DB-608 Conc	% Diff
98334007	PCB 28	4	6	50
98334007	PCB 101	5	9	80
98334007	PCB 123	13	2	550
98334007	PCB 138	16	9	78
98334007	PCB 128	2	3	50
98334007	PCB 195	1	3	200
98334007	PCB 206	3	1	200

Differences can arise from analytical interferences on one column. However, the percent differences are not deemed significant at the reported concentrations. The lower concentration was reported for each analyte, unless interferences or coelution prevented use of the lower concentration.

12 Sample Analysis

A cursory review of raw data was performed. All laboratory deliverables were present and complete. A duplicate analysis was also performed, RPD results between replicates were less than 25 percent for all analytes. The case narrative indicated that recovery of PCB 153 for matrix spike and matrix spike duplicate samples (98334002) were outside the control limits due to matrix interference. Additionally, the case narrative noted that the PCB 18 recovery in the LCS was outside the project QC limits, as the matrix spike was in control, no action was taken. No other complications were noted.

13. Laboratory Contact

The laboratory was contacted regarding internal QC limits for PCB congeners. To date, the laboratory has not generated internal QC limits for this analysis, project guidelines were used to evaluate quality control results.

Data Assessment

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers that modify the usefulness of the individual values



QA Review Batch K9805398 (PCB Congeners)

Site: Duwamish River

Page 8

Data Qualifiers

- U - The compound was analyzed for, but was not detected.
- UJ - The compound was analyzed for, but was not detected. The associated quantitation limit is an estimate because quality control criteria were not met.
- J - The analyte was positively identified, but the associated numerical value is an estimated quantity because quality control criteria were not met or because concentrations reported are less than CRDL or lowest calibration standard.
- R - Quality control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
- N - Presumptive evidence of presence of material (tentative identification).
- I - Elevated reporting limit due to matrix interference.

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

Congener Specific PCBs

Sample Name 98334000 Units ug/Kg (ppb)  
 Lab Code K9805398-001 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND U I	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/20/98	2	
PCB 52	EPA 3550B	8082	3	1	8/14/98	8/20/98	ND U I	B
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/20/98	2	
PCB 66	EPA 3550B	8082	7	1	8/14/98	8/20/98	ND U I	B
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/20/98	5	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 123	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 118	EPA 3550B	8082	5	1	8/14/98	8/20/98	ND U I	B
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 153	EPA 3550B	8082	8	1	8/14/98	8/20/98	ND U I	B
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/20/98	2	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/20/98	10	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 187	EPA 3550B	8082	6	1	8/14/98	8/20/98	ND U I	B
PCB 128	EPA 3550B	8082	2	1	8/14/98	8/20/98	ND U I	B
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 156	EPA 3550B	8082	2	1	8/14/98	8/20/98	ND U I	B
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 180	EPA 3550B	8082	8	1	8/14/98	8/20/98	ND U I	B
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 170	EPA 3550B	8082	4	1	8/14/98	8/20/98	ND U I	B
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/20/98	3	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/20/98	ND	

*NOT 10/17/98*

B The MRL is elevated because of matrix interferences

Approved By   
 IS4/021397p

Date 8/27/98

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**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

**Congener Specific PCBs**

**Sample Name:** 98334001 **Units:** ug/Kg (ppb)  
**Lab Code:** K9805398-002 **Basis:** Dry  
**Test Notes:**

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	2 J	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	5	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 66	EPA 3550B	8082	1	1	8/14/98	8/21/98	11	
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND UI	β
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	8	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	11	1	8/14/98	8/21/98	ND UI	β
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	14	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	5	1	8/14/98	8/21/98	ND UI	β
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 167	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND UI	β
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	8	1	8/14/98	8/21/98	ND UI	β
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	5	1	8/14/98	8/21/98	ND UI	β
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

*NOT 10/17/98*

B The MRL is elevated because of matrix interferences

Approved By 

Date 8/27/98

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc  
 Project: Duwamish River/4000-027-001-2019-38  
 Sample Matrix: Sediment

Service Request: K9805398  
 Date Collected: 8/11/98  
 Date Received: 8/12/98

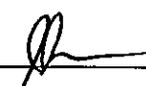
Congener Specific PCBs

Sample Name 98334002 Units ug/Kg (ppb)  
 Lab Code K9805398-003 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	J
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 66	EPA 3550B	8082	1	1	8/14/98	8/21/98	8	
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	6	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	5	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	10	1	8/14/98	8/21/98	ND	U-I B
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	12	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 167	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND	U-I B
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

B The MRL is elevated because of matrix interferences

*MGT 10/17/98*

Approved By   
 1844021397p

Date 8/27/98

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**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

Congener Specific PCBs

Sample Name 98334003 Units ug/Kg (ppb)  
 Lab Code K9805398-004 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	1 UJ
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 66	EPA 3550B	8082	1	1	8/14/98	8/21/98	5	
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	1	1	8/14/98	8/21/98	6	
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

*MJT 10/17/98*

Approved By  
 1844021397p



Date

*8/27/98*

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**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

**Congener Specific PCBs**

**Sample Name** 98334004 **Units** ug/Kg (ppb)  
**Lab Code** K9805398-005 **Basis** Dry  
**Test Notes**

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	1 J	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 66	EPA 3550B	8082	15	1	8/14/98	8/21/98	ND U-I	B
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	11	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	3	1	8/14/98	8/21/98	ND U-I	B
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	14	
PCB 114	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND U-I	B
PCB 153	EPA 3550B	8082	1	1	8/14/98	8/21/98	12	
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	21	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

*7/27/19/17/98*

B The MRL is elevated because of matrix interferences

Approved By  Date 8/27/98

**00031**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc  
 Project: Duwamish River/4000-027-001-2019-38  
 Sample Matrix: Sediment

Service Request: K9805398  
 Date Collected: 8/11/98  
 Date Received: 8/12/98

Congener Specific PCBs

Sample Name 98334005 Units ug/Kg (ppb)  
 Lab Code K9805398-006 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	1 J	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 66	EPA 3550B	8082	11	1	8/14/98	8/21/98	ND UI	B
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND UI	B
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	14	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

B The MRL is elevated because of matrix interferences

*mgT 10/17/98*

Approved By  Date 8/27/98

00032

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

Congener Specific PCBs

Sample Name 98334006 Units ug/Kg (ppb)  
 Lab Code K9805398-007 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	3 J	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	6	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	6	
PCB 66	EPA 3550B	8082	22	1	8/14/98	8/21/98	ND UI	B
PCB 101	EPA 3550B	8082	1	1	8/14/98	8/21/98	15	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND UI	B
PCB 123	EPA 3550B	8082	3	1	8/14/98	8/21/98	ND UI	B
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	15	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	1	1	8/14/98	8/21/98	18	
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	7	
PCB 138	EPA 3550B	8082	10	10	8/14/98	8/25/98	37	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	8	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	3	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	13	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

B The MRL is elevated because of matrix interferences

*MGT 10/17/98*

Approved By *[Signature]* Date 8/27/98

**00033**

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** Roy F Weston, Inc  
**Project:** Duwamish River/4000-027-001-2019-38  
**Sample Matrix:** Sediment

**Service Request:** K9805398  
**Date Collected:** 8/11/98  
**Date Received:** 8/12/98

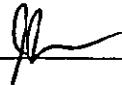
**Congener Specific PCBs**

Sample Name 98334007 Units ug/Kg (ppb)  
 Lab Code K9805398-008 Basis Dry  
 Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PCB 18	EPA 3550B	8082	1	1	8/14/98	8/21/98	2 J	
PCB 28	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 52	EPA 3550B	8082	1	1	8/14/98	8/21/98	6	
PCB 44	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 66	EPA 3550B	8082	1	1	8/14/98	8/21/98	14	
PCB 101-	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 81	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 77	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 123	EPA 3550B	8082	2	1	8/14/98	8/21/98	ND U I	✓
PCB 118	EPA 3550B	8082	1	1	8/14/98	8/21/98	9	
PCB 114	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 153	EPA 3550B	8082	1	1	8/14/98	8/21/98	12	
PCB 105	EPA 3550B	8082	1	1	8/14/98	8/21/98	4	
PCB 138	EPA 3550B	8082	1	1	8/14/98	8/21/98	16	
PCB 126	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 187	EPA 3550B	8082	1	1	8/14/98	8/21/98	5	
PCB 128	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 167	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 156	EPA 3550B	8082	1	1	8/14/98	8/21/98	2	
PCB 157	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 180	EPA 3550B	8082	1	1	8/14/98	8/21/98	8	
PCB 169	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 170	EPA 3550B	8082	1	1	8/14/98	8/21/98	5	
PCB 189	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	
PCB 195	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 206	EPA 3550B	8082	1	1	8/14/98	8/21/98	1	
PCB 209	EPA 3550B	8082	1	1	8/14/98	8/21/98	ND	

B The MRL is elevated because of matrix interferences

*neg 10/17/98*

Approved By  Date 8/27/98

**00034**